

REMARKS

This communication is a full and timely response to the aforementioned non-final Office Action dated July 15, 2009. Claims 1-22, as presented in the Amendment filed on April 27, 2009, are not amended and remain in the application. Thus, claims 1-22 are pending in the application. Claims 1 and 14-17 are independent.

Reconsideration of the application and withdrawal of the rejections of the claims are respectfully requested in view of the following remarks.

I. Rejections Under 35 U.S.C. § 103(a)

A. Claims 1, 12-18, 21 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Inaba et al. (U.S. Patent No. 5,477,557, hereinafter "Inaba") in view of Kobayashi et al. (U.S. Patent No. 6,181,718, hereinafter "Kobayashi").

This rejection is respectfully traversed for at least the following reasons. With the claimed invention as a road map, the Office applied bits and pieces of the features of Inaba and Kobayashi references in an attempt to arrive at the claimed invention. Applicants respectfully submit that it would not have been obvious to combine the applied references in the manner proposed by the Office to arrive at the claimed invention. Furthermore, Applicants respectfully submit that one skilled in the art would not have reason or been motivated to combine Inaba and Kobayashi in the manner proposed by the Office to arrive at the claimed invention.

An exemplary embodiment of the present invention provides an optical semiconductor device which (1) improves the deterioration of an optical output waveform due to the asymmetry between a rise time and a fall time of the output waveform of an LD driving circuit, (2) improves the deterioration of the optical output waveform such as the deterioration following a sharp decline of passing characteristics of an optical semiconductor module, and (3) improves the quality of the optical output waveform. See, for example, line 23 on page 5 to line 5 on page 6, and lines 13-19 on page 27 of the original specification.

The claimed invention achieves these advantageous aspects, in part, because of the arrangement of the constituent elements as recited in independent claims 1 and 14-17. For example, claim 1 recites that the optical semiconductor

element has a cathode and an anode. Each electrode among the pair of electrodes of the optical semiconductor element is connected to two components. In particular, claim 1 recites that both the first conductor line and the first inductance element are connected to the cathode of the optical semiconductor element. In addition, claim 1 recites that both the second conductor line and the second inductance element are connected to the anode of the optical semiconductor element.

On the other hand, Inaba provides a laser drive circuit for the purpose of precisely controlling the intensity of a laser beam (see, e.g., Column 1, lines 14-17). In an attempt to arrive at the claimed invention, the Office applied the laser drive amplifier illustrated in Figure 2, which corresponds to the laser driving amplifying circuit 5 illustrated in Figure 1. To obtain the object of precisely controlling the intensity of a laser beam, Inaba discloses that the laser drive circuit modulates the intensity of a laser beam emitted from a laser device L1 to a maximum power and a minimum power in accordance with first and second values of a binary signal (see Column 1, lines 34-37). The laser drive circuit samples and holds the maximum and minimum powers of the modulated signal (see Column 1, lines 39-67). In addition, the laser drive circuit of Inaba produces a maximum error detection signal representing a difference between the detection output signal applied thereto and a maximum reference voltage, and a minimum error detection signal representing a difference between detection output signal applied thereto and a minimum reference (see Column 2, lines 1-9). The maximum and minimum detection signals are then fed to the laser drive amplifier 5 so that a maximum power and a minimum power L1 of the laser diode LD are feedback controlled (see Column 2, lines 9-13).

Accordingly, the laser drive circuit of Inaba is merely for controlling the intensity of a laser diode (maximum power versus minimum power). Inaba does not disclose or suggest any configuration for improving the deterioration of an optical output waveform at all.

As such, even if both the anode and cathode of the laser diode in Figure 2 of Inaba were each respectively connected to both a conductor line and an inductance element, such a modification would not improve the deterioration of an optical output waveform. Therefore, even if the inductor-to-ground connection illustrated in Figure 11 of Kobayashi was substituted for the inductor-less circuitry element connected to

the anode of the laser diode 1d in Figure 2 of Inaba, it would not be possible to improve the deterioration of an optical output waveform.

Consequently, one skilled in the art would not have reason or been motivated to modify Inaba and Kobayashi in the manner proposed by the Office, because such a modification would not attain the advantageous feature of improving the deterioration in an optical output waveform, which is obtainable due to the recited arrangement of (A) both the first conductor line and the first inductance element being connected to the cathode of the optical semiconductor element, and (B) both the second conductor line and the second inductance element being connected to the anode of the optical semiconductor element, as recited in claim 1. Independent claims 14-17 each recite elements similar to the arrangement of features (A) and (B) of claim 1.

Accordingly, for at least the foregoing reasons, Applicants respectfully submit that there is no reason or motivation to combine the circuit of Figure 2 of Inaba with the inductor-to-ground connection of Kobayashi in an attempt to arrive at the subject matter of claims 1 and 14-17 and obtain the advantageous aspects of the claimed invention.

Therefore, Applicants respectfully request that claims 1 and 14-17 are patentable over Inaba and Kobayashi, since one skilled in the art would not have reason or been motivated to combine the references in the manner proposed by the Office.

B. Dependent claims 2, 5, 19 and 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Inaba and Kobayashi in view of Nagahori, Takeshi et al. ("An Analog Front-End Chip Set Employing an Electro-Optical Mixed Design on SPICE for 5-Gb/s/ch Parallel Optical Interconnection." IEEE Journal of Solid-State Circuits, Volume 36, No. 12, pp 1984-1994, December 2001, hereinafter "Takeshi"). Dependent claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Inaba in view of Kobayashi and Nagarajan (U.S. Patent No. 5,760,939). Dependent claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Inaba, Kobayashi, Takeshi and further in view of Ito et al. (U.S. Patent No. 4,975,664, hereinafter "Ito").

In addition, dependent claims 7-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Inaba, Kobayashi, Takeshi, Ito and further in view of Kobayashi et al. (U.S. Patent No. 5,982,793, hereinafter "Kobayashi '793"). Lastly, dependent claims 10-11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Inaba, Kobayashi and further in view of Kobayashi '793.

As discussed above, Inaba and Kobayashi, either individually or in combination, do not disclose or suggest the arrangement of the optical semiconductor element, first and second conductor lines, and first and second inductance elements as recited in claim 1, as well as their corresponding features in claims 14-17.

Similarly, Takeshi, Ito, Nagarajan and Kobayashi '793 also each fail to disclose or suggest the arrangement of the optical semiconductor element, first and second conductor lines, and first and second inductance elements as recited in claim 1, as well as their corresponding features in claims 14-17.

Consequently, Takeshi, Ito, Nagarajan and Kobayashi '793 cannot cure the deficiencies of Inaba and Kobayashi for failing to disclose or suggest all the recited features of claims 1 and 14-17.

Accordingly, no obvious combination of Inaba, Kobayashi, Takeshi, Ito, Nagarajan and Kobayashi '793 can result in the subject matter of claims 1 and 14-17, since these references, either individually or in combination, fail to disclose or suggest all the recited features of claims 1 and 14-17.

Therefore, Applicants respectfully submit that claims 1 and 14-17, as well as claims 2-13 and 18-22 which depend therefrom, are patentable over the applied references.

Dependent claims 2-13 and 18-22 recite further distinguishing features over the applied references, and are also patentable by virtue of depending from claims 1 and 14-17. The foregoing explanation of the patentability of independent claims 1 and 14-17 is sufficiently clear such that it is believed to be unnecessary to separately demonstrate the additional patentable features of the dependent claims at this time. However, Applicants reserve the right to do should it become appropriate.

II. Conclusion

In view of the foregoing remarks, it is respectfully submitted that the present application is clearly in condition for allowance. Accordingly, favorable examination and consideration of the instant application are respectfully requested.

If, after reviewing this Request for Reconsideration, the Examiner believes there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY PC

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By: /Jonathan R. Bowser/
Jonathan R. Bowser
Registration No. 54574

Customer No. 21839

703 836 6620